



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JUN 15 2000

OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

**MEMORANDUM**

**SUBJECT:** National Remedy Review Board Recommendations for the Kennecott South Zone Superfund Site, Operable Unit Two

**FROM:** Bruce K. Means, Chair  
National Remedy Review Board

A handwritten signature in black ink, appearing to read "B. Means", is written over the name "Bruce K. Means" in the "FROM" field.

**TO:** Max Dodson, Assistant Regional Administrator  
Office of Ecosystems Protection and Remediation  
EPA Region 8

**Purpose**

The National Remedy Review Board (NRRB) has completed its review of the proposed Superfund cleanup action for Kennecott South Zone operable unit two. This memorandum documents the NRRB's advisory recommendations.

**Context for NRRB Review**

The Administrator announced the NRRB as one of the October 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective decisions. The NRRB furthers these goals by providing a cross-regional, management-level, "real time" review of high cost proposed response actions prior to their being issued for public comment. The board reviews all proposed cleanup actions that exceed its cost-based review criteria.

The NRRB review evaluates the proposed actions for consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and relevant Superfund policy and guidance. It focuses on the nature and complexity of the site; health and environmental risks; the range of alternatives that address site risks; the quality and reasonableness of the cost estimates for alternatives; regional, state/tribal, and other stakeholder opinions on the proposed actions, and any other relevant factors.

Generally, the NRRB makes "advisory recommendations" to the appropriate regional decision maker. The region will then include these recommendations in the Administrative

Record for the site before it issues the proposed response action for public comment. While the region is expected to give the board's recommendations substantial weight, other important factors, such as subsequent public comment or technical analyses of response options, may influence the final regional decision. The board expects the regional decision maker to respond in writing to its recommendations within a reasonable period of time, noting in particular how the recommendations influenced the proposed cleanup decision, including any effect on the estimated cost of the action. It is important to remember that the NRRB does not change the Agency's current delegations or alter in any way the public's role in site decisions.

## **Overview of the Proposed Action**

Operable unit two of the Kennecott South Zone site is approximately 10 miles Southwest of Salt Lake City, UT. Groundwater at the site is contaminated from acid mine drainage and leachates from mining operations. The primary contaminants are heavy metals and sulfates, and the groundwater exhibits a low pH. EPA Region 8 proposes to clean up groundwater at the site by installing wells to prevent further spread of the contamination and bring contaminated water to the surface. The contaminated water will be treated to remove the contaminants. While restoration of the aquifer is underway, the remedy will rely on institutional controls and point of use treatment to prevent exposure to the contaminated groundwater.

## **NRRB Advisory Recommendations**

The NRRB reviewed the informational package for this proposal and discussed related issues with EPA's Eva Hoffman, and the Utah Department of Environmental Quality's Kent Gray, Brad Johnson, Brent Everett and Dan Hall on March 14, 2000. Based on this review and discussion the board offers the following comments.

- In conducting its review, the board notes that the proposal represents a combined CERCLA 106/Natural Resource Damages (NRD) action. The board also acknowledges that the need for drinking water in the Salt Lake area is addressed by an NRD settlement establishing specific requirements. These requirements provide incentives for Kennecott to focus first on providing potable water. The board asks that the comments below be placed in this site specific and regulatory context.
- One of the region's stated goals for the proposed ground water cleanup action is to restore the aquifer to beneficial use. However, the proposed action does not clearly describe how long it will take to do so. The board recommends that the region include this information in the decision documents for this site, both with respect to the acid plume and the sulfate plume (and include information on the potential for contaminant re-dissolution).
- The board could not fully evaluate the cost-effectiveness of the proposed pump and treat system with respect to potential restoration time frames. To allow for such an assessment, the board recommends that the region further evaluate the following:
  - Alternate (e.g., increased) pumping rates, well locations, or other system design features that would accelerate contaminated groundwater withdrawal, focusing on the acid plume in particular.

- The use of ground water reinjection to enhance cleanup and shorten overall restoration time frame.
- The cost-effectiveness of the preferred treatment processes (nano-filtration and reverse osmosis) depends in part on disposal of the concentrate with the tailings. An alternate approach will be needed following mine closure. The board recommends that Kennecott continue to look at emerging technologies for cost-effective treatment over the long term. With this in mind, the region should consider including a technology re-evaluation provision in the record of decision or the CERCLA consent decree.
- The cost summaries for the preferred alternatives include \$16 million for institutional controls (ICs). The information presented to the board notes that these controls include the purchase of water rights and land. The cost of these ICs appear high, especially considering that \$2.4 million is also to be spent on preventing exposure (e.g., alternate water supplies). The board recommends that the region clarify how ICs will be implemented to ensure protectiveness, and that it provide a more detailed breakdown of the \$16 million IC costs.

The NRRB appreciates the region's efforts to work closely with the state and community groups at this site. We encourage Region 8 management and staff to work with their regional NRRB representative and the Region 3/8 Accelerated Response Center in the Office of Emergency and Remedial Response to discuss any appropriate follow-up actions.

Thank you for your support and the support of your staff in preparing for this review. Please give me a call at 703-603-8815 should you have any questions.

cc: S. Luftig  
T. Fields  
B. Breen  
J. Woolford  
C. Hooks  
R. Hall  
OERR Regional Center Directors